INSTRUCTIONS

- No single application for the auction of water from State lands shall include well sites located in more than one section of land.
- This application will not be considered unless it is fully completed and all supplemental forms and information, including the hydrology report referred to in question 15, are completed and attached.
- 3. Attach additional pages, if necessary.
- 4. Filing fee of \$50.00 must be paid at the time this application is submitted.

ARIZONA STATE LAND DEPARTMENT

1624 West Adams

Phoenix, Arizona 85007

APPLICATION FOR THE COMMISSIONER TO AUCTION WATER FROM STATE LANDS

APPLICANT INFORMATION

		THEORIGIA			
I/we Cyprus Mine	s Corporation				
		name)			
of Post Office	Box 245, Bagd	ad, Arizon	na 8632	ı	
	(а	ddress)			
do hereby make applit described, in accord the rules and regula surface lease, easen	lance with the pr stions of the Sta	ovisions of te Land Dens	the law o	f the State	of Arizona,
Subdivision	Section	Township	Range	Acreage	County
vepnepnep	24	15N	9W	10	Yavapai
1. State whether in	*				
2. If individual, s	state: Age n/a	Sex	Marita	l Status	
3. If corporation,	give State in wh:	ich incorpor	ated. De	laware	
Is the corporati	on authorized to	do business	in Arizo	na? yes	
4. If a partnership	etata the second				
n/a	, state the names	s and addres	ses of eac	ch partner.	
5. Would the rights the applicant? trust agreement		greement be	held in tr	rust for an	dad sasu af aba
n/a 5. Would the rights the applicant? trust agreement of each benefici. I hereby certify contained and sta	under a Water Ag NO If yes, showing the name, ary, principal or under the pend	greement be please atta address, ag ward.	held in the characteristic control of the control o	rust for and in the state of th	ded copy of the marital status
n/a 5. Would the rights the applicant? trust agreement of each beneficiant. I hereby certify contained and stand belief, true,	under a Water Ag NO If yes, showing the name, ary, principal or under the penatements herein correct, and	greement be please attained address, and ward. alty of pen made are complete.	held in the characteristic continues of the characteristic con	rust for and it is that the it is best of	ded copy of the marital status
n/a 5. Would the rights the applicant? trust agreement of each beneficiant. I hereby certify contained and stand belief, true,	under a Water Ag NO If yes, showing the name, ary, principal or under the penatements herein correct, and	greement be please atta address, as ward. alty of pen made are complete. March	held in the characteristic continuity, to the company of the compa	rust for and it is that the it is best of	narital status nformation my knowledge
n/a 5. Would the rights the applicant? trust agreement of each beneficiant. I hereby certify contained and stand belief, true,	under a Water Ag NO If yes, showing the name, ary, principal or under the penatements herein correct, and	greement be please atta address, as ward. alty of pen made are complete. March	held in the chia certification of the citizen of th	rust for an institution of the following states of the	narital status nformation my knowledge
n/a 5. Would the rights the applicant? trust agreement of each beneficial hereby certify contained and staand belief, true,	under a Water Ag NO If yes, showing the name, ary, principal or under the penatements herein correct, and	greement be please atta address, a ward. alty of pen made are complete. March	held in the characteristic continuity, to the company of the compa	rust for and fine in the interest of the state of the sta	narital status nformation my knowledge
n/a 5. Would the rights the applicant? trust agreement of each beneficial hereby certify contained and stand belief, true, Dated this 15th	under a Water Ag NO If yes, showing the name, ary, principal or under the penatements herein correct, and day of	greement be please attained address, and ward. alty of pen made are complete. March	held in the charge, citized rjury, to the cyprus applicant by the control of the cyprus applicant by t	that the in best of Mines Cor	narital status nformation my knowledge
n/a 5. Would the rights the applicant? trust agreement of each benefici. I hereby certify contained and sta and belief, true, pated this 15th	under a Water Ag NO If yes, showing the name, ary, principal or under the penatements herein correct, and day of	greement be please attached address, and alty of pen made are complete. March BE FILLED IN	rjury, to the Cyprus Applicant By W. Reno	cust for any lifted recordenship and that the important best of the best of th	ded copy of the marital status Information my knowledge Doration
n/a 5. Would the rights the applicant? trust agreement of each beneficiant. I hereby certify contained and stand belief, true, pated this 15th	under a Water Ag NO If yes, showing the name, ary, principal or under the penatements herein correct, and day of	greement be please atta- address, as ward. alty of pen made are complete. March BE FILLED IN	rjury, to the Cyprus Applicant W. Rence By APPLI Reco	that the in best of Mines Cor	ded copy of the marital status Information my knowledge Doration

~ T.1	LAND AND	HYDROLOGIC	INFORMA"

	(a)	industrial r The water will which are locat	be rem	oved b	v the u	se of the	presently (existing	wells
		Location	Sec.	Twp.		Depth	Pump H.P.	Capaci	+ v
		NEL NEL NEL	24	15N	9W	250'	not in use	(30)	•
		NE L NE L NE L	24	15N	9W	288'	50	65	_ g.p.
		NE L NE L NE L	24	15N	9W	525'	90	275	_ g.p.
I	(b)	Are the wells of Active Manageme expansion (here 1980 Groundwate	after	a or a respec	n area tivev *	oesignated	las Irrigat	ands with	nin an
		No							
		If so, indicate	which	AMA o	r INA:	n/a			
		If applicable, the groundwater n/a	SOUGHI	re a g t to b	randfat e purch	hered wate ased by re	er right ass eason of thi	ociated s applic	with ation
		If so, what is	the typ	e and	antici	pated amou	nt of grand	Ifathered	wate
		rights? <u>n/a</u>		····					
	(a)	If applicable, described new w	the sal	le of '	the wat	er will re	quire the f	ollowing	,
		Location	Sec.	Twp.	Rge.	Depth	Pump H.P.	Capacit	.y
									g.p.i
		1 1 1							g.p.
		iii iii							
	(b)								g.p.1
	(b)		describ						g.p.1
	(b)	Will the wells an AMA or INA?	describ	ed in	Subsec	tion (a) b	e located o	n lands	g.p.r
	(b)	Will the wells	describ no which	AMA or	Subsection INA:	n/a	e located o	n lands	g.p.r
	(b)	Will the wells an AMA or INA? If so, indicate Will the drillitherefrom requi	mo which ng of a re the no	AMA or	Subsection INA:	n/a and with groundwa	drawal of g	n lands roundwat wal perm	g.p.i

wat	er well, lo	" casin	g, 50	h.p. pum	p		
wat	er well, la	2" casin	g, 90	h.p. pum	ıp ·		
wat	er well (no	ot in us	e)				
app	prox. 20' x	20' fen	ce				
and	are owned by	Cyprus	Mines	S Corpora	tion	,	
	following des					uired in ac	dition to
	wells:		·				
Nor	ne						
				·-···			
						-	
(a)		ill be use	d upon		wing descr	ibed lands:	:
	Sub. Sł			Section 2	Twp. 14N	R ge. 9W	County Yavap
	S ¹ / ₂ ×1/ ₄ ×	x*x	**	3	14N	<u>9W</u>	Yavap
	N ₂ N _K	x*x	×	10	14N	<u>9W</u>	_Yavap
(b)	In transport use describe transported If yes, expl	ed in subs across ba	ection	(a) of th	is questio	n, will the	the place
(b)	In transport use describe transported	ing the wed in subs	ater f	rom the pla (a) of th	ace of wit	hdrawal to n, will the	the place
(b)	In transport use describe transported	ing the wed in subs	ater f	rom the pla (a) of th	ace of wit	hdrawal to n, will the	the place
(b)	In transport use describe transported If yes, expl	ing the wed in substacross balain:	ater fection sin or	rom the pla (a) of the subbasin b	ace of wit is questio boundaries	hdrawal to n, will the ? No	an AMA or
	In transport use describe transported If yes, expl Are the land INA? No	ing the wed in substacross balain:	ed in f so,	rom the pla (a) of the subbasin b	(a) locat	ed within a	the place water be
	In transport use describe transported If yes, expl Are the lance INA? No	ing the wed in subs across balain: ds describ . I	ed in f so, re a ghe wat	subsection indicate where is proposed	(a) locathich AMA o	ed within a r INA: ight associused? n/	the place water be an AMA or lated with a
	In transport use describe transported If yes, expl Are the land INA? No If applicable the land upon the land upon the land upon the land area of, or	ing the wed in substacross balain: Is described in the and which the in the and is described in served by	ed in f so, re a ghe wat inticip	subsection indicate where is proposed type a	(a) located water resed to be and amount	ed within a r INA: ight associused? n/ of the graded within in	the place water be an AMA or lated with a andfathered wor utili

14.	Is applicant awar any impediment to the withdraw transportation, or use of the groundwater as described in this application existing by reason of the Act or any other law which may affect the legality of the sale applied for herein?
	If yes, explain:
15.	Attach a hydrology report which shows that the amount of water sought to be purchased is available.
16.	Using the plat on the following page, identify the locations of whichever of the following are applicable:
-	(a) Presently existing wells;
	(b) Proposed new wells;
	(c) Presently existing improvements other than wells;
	(d) Proposed new improvements other than wells;
	(e) Access routes, including description and dimensions;
	(f) Basin or subbasin boundaries;
	(g) Land upon which water is proposed to be used; and
	(h) Land ownership,
rout Regu Wate Surf Stat the agre with appr	this application is approved and an auction is held, any resulting access the will be subject to the laws of the State of Arizona, the Rules and elations of the Department, the provisions and conditions contained in the er Agreement, and the provisions and conditions contained in the appropriate face lease, easement or permit which buyer must acquire from the Arizona to Land Department. Neither the making of this application, acceptance by Arizona State Land Department of this application or filing fee, a water ement nor subsequent issuance if any surface lease, easement or permit for idrawal or transportation of the water purchases should be considered as an eval or suggestion of any kind whatsoever of an access route over any pri-
	ACKNOWLEDGMENT
the Depa give	the signature below, the applicant acknowledges and recognizes that neither making of this application nor the acceptance by the Arizona State Land artment of this application or the filing fee submitted herewith in any way es to or vests in the applicant any right or entitlement to any water or use state land for which this application is made.
	VERIFICATION
of p tion corr	signing this application, I/We hereby certify to the Department under penalty berjury that the statements made and information contained in this application, and in all supplemental information attached hereto, are full, true, rect and complete to the best of my/our knowledge and (if applicable) further tify that I/We am/are legally authorized to make this application for and on all of the persons described herein.

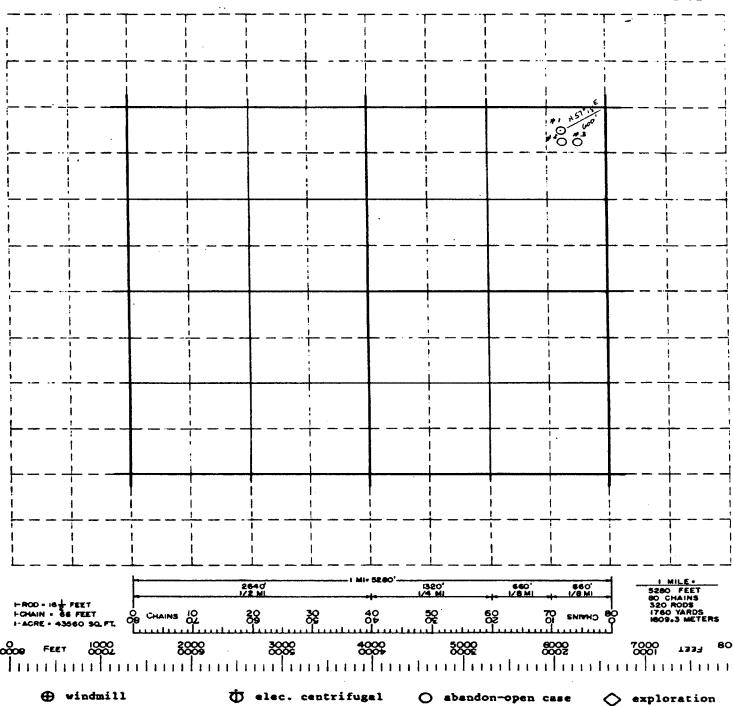
If applicant is other than individual, indicate:

VP and General Manager
(Title of person signing)

DATED March 15, 11986

SEC 24 TWP 15N RGE. 9W

ARIZONA STATE LAND DEPT.



🛇 sbandon-capped .

plugged

→ liquid fuel

O natural gas

7-82

T elec. turbine

C artesian

FOR DEPARTMENTAL USE ONLY

Received. \$	Date	By	Receipt	No
	er to Application No.			
APPRAISAL & DETER	MINATION:			
The Commissioner of PER ACRE FOOT (ot) production to be	does hereby appraise her unit units.	the value o) and es	f the water at tablishes the m	\$ inimum annual
	day of			
		STATE LAND	DEPARTMENT	
		STATE LAND	COMMISSIONER	
ORDER AUTHORIZING	SALE:			
the provisions of	es hereby authorize the law in such cases al conditions as follo	s made, uti	the subject wat lizing the valu	er according to es set forth
Dated this	day of		, 19	•
		STATE LAND	DEPARTMENT	
		STATE LAND	COMMISSIONER	
ORDER REJECTING AF	PLICATION AND DISSOLV	/ING SALE:		
chat it is not in	and the Department beint the best interest of application on the rev	the State o	of Arizona to e	remises find ell the water
THEREFORE IT IS OR cable, that the pr	DERED that the applications of the control of the c	ation is he	ereby denied and	d, where appli-
Dated this	day of		, 19	•
		STATE LAND	DEPARTMENT	

STATE LAND COMMISSIONER

PDC000170

HYDROLOGIC INVESTIGATION

OF THE

TUNGSTONA WELLS

for

Cyprus Bagdad Copper Company

by

Paul A. Manera, P.E.

May 19, 1975





INTRODUCTION

Location

The Tungstona Wells are located in Warm Spring Wash approximately five air miles northeast of Bagdad, Arizona. The legal description of the Tungstona Wells is the NE $\frac{1}{4}$ NE $\frac{1}{4}$ NE $\frac{1}{4}$ Section 24, T. 15 N., R. 9 W., as shown on Figure 1.

GEOLOGY

General

Warm Spring Creek is an entrenched stream cut into the Lawler Peak granite. Warm Spring Creek is a relatively short stream of approximately one mile in reach. In the upper half of the stream reach the Lawler Peak granite on each side of the creek is covered by the Gila conglomerate or the Sanders basalt.

Structure

A fault cuts across Warm Spring Creek near the northeast corner of Section 24, T. 15 N., R. 9 W. The strike of the fault is N 23^O W with a dip of 79^O to 85^O south. The primary fault is shown on Figures 2 and 3. Above the fault, i.e. northeast of the fault, the granite is relatively solid with few fractures. Downstream from the primary fault is a large crush zone with numerous parallel secondary faults and fractures.

An electrical resistivity survey run down the streambed indicated that the secondary faulting and fracture crush zone extends downstream in excess of 500 feet.

R.1014. R.9 W. R. B 17. z • . 10 T.15N. N T. IS N. 3,4 T. 15 N. . EB-CONTRERAS T. 15 M., R. 9 W., SEC. 1, NW SEN LEASE NO. 00877 IO ACRES (COMMERCIAL) ** Ħ - URIE T.15N.,R.9 W.,SEC.11, SE SE SE LEASE NO. 00877 10 ACRES (COMMERCIAL) T. 15 N. WARM SPRINGS T. 15 N., R. 9 W., SEC. 24, MENEN LEASE 110. 00878 IO ACRES (COMMERCIAL) (TUNGSTONA WELLS) T.141/2 N. SYCAMORE T. 14 N., R. 8 W., SEC. 29 LEASE NO. .(COMPERCIAL) T. 14 N. ı T.14 N. R.IOW. R. 9 W. R.8 W.

CYPRUS - BAGDAD COPPER COMPANY WATER WELL SITES

FIGURE 1

HYDROLOGY

Warm Springs

Warm Springs issue from the fault and fracture crush zone downstream from the primary fault. The springs were actually a series of seeps which continuously added to the flow of Warm Springs Creek. The fracture zone is the hydraulic conduit supplying the springs and the wells.

Wells

Three wells were drilled downstream from the primary fault with Tungstona Well 1 nearest the fault and Tungstona Well 3 furthest downstream. The well schedules and drillers' logs are included in the appendix.

Well Yield

Table 1 shows that characteristics of the Tungstona Wells.

Table 1

Tungstona Well No.	Total Depth (feet)	Original Production (gpm)	Drawdown (feet)	Date	Production, gpm 1971 and thereafter
1	228	280	38	5/13/60	Abondoned
2	250	195	134	ca12/65	65
3	522	540	55	8/14/62	290

Originally, Well 1 produced 280 gpm. When Well 2 was put into production the yield of Well 1 decreased and when Well 3 was completed, Well 1 was abandoned.

Well 3 can be pumped continuously at the rate of 280 gpm without fluctuation. Well 2 can be pumped at a rate of 200 gpm for eight hours every 24 hours. However, if Well 3 is not pumping, Well 2 can be continuously pumped at the rate of 200 gpm.

During the period 1971 - 1974 the withdrawal from the Tungstona Wells was:

Table 2

Year	Total Gallons	Withdrawal acre-feet (rounded)	Average gpm
1971	148,816,000	457	283
1972	45,026,000	138	. 86
1973	37,176,000	114	71
1974	65,931,000	202	125

CONCLUSION

Actual withdrawal extends back to 1958. The historical continuity of production indicates that a continued withdrawal of 340 gpm is a pragmatic projection of the water supply available from Tungstona Wells 2 and 3.



i.

The decline in the withdrawal rate shown in Table 2 is a result of less demand rather than a decline in yield of the Tungstona Wells. The construction of the pipeline from Francis Spring and the large volume of water available has temporarily reduced the demand on the Tungstona Wells, Urie Well and Contreras Well.

The projected longevity of the supply is of long, but unknown, duration. It is believed that twenty years is a minimum longevity.

APPENDIX A
Well Schedule and Logs



WELL SCHEDULE						WE.	LL .10	· (B-15	-9)24	aaa	
										Well 1	
Recorded by BB	of	urce data	SLD	Da	te	7-20	19	-			
State <u>Arizona</u>											
T. <u>15</u> N S R	•9	_¥ W	Sec	tion_	24	<u>IIE</u>	_1/4	NE]	/4 <u>N</u>	<u>E1/</u>	4 G. 8 5
Owner Bandad Con	per Co	rp.	····	Ad	dress	Bagd	lad. Ar	izona			B&M
Driller Roscoe G.											
Surface Altitude		Me Dr	thod	Cable	Rot	ary	Rever	se Rot	tarv	Air R	Otary
Total Depth 228											
									_		
Date well deepened											
Casing Diameter	<u>10</u> in	ches_	0_tc	228	_ft	incl	hes	_to	ft	in	to
Perforations 30	_to_2	28 :	ft	to_		ft	_to	ft.			
Sia	ze ope	ning	12"	x 12"	Cı	uts p	er fo		4		
Major Aquifer											-
Projects						- 4				· 	
									A COLUMN TO A STATE OF THE STAT		
Date		5/13/6	0	<u> </u>		<u> </u>	<u> </u>			1	T
Source data	SLD 218	SLD	 								
SWL	218	10	<u> </u>			<u> </u>					
Altitude WL Discharge	 		<u> </u>	ļ	ļ	 			ļ	_	
gpm	280	280							1		}
gpm Drawdown	200	200	 		 	 	 		 		
feet		38	<u> </u>		.						
Specific Capacity											1
Perforated						1	 			+	 -
'Interval							1				
Formation										1	
Coefficient	<u> </u>	L	<u> </u>	<u> </u>	<u> </u>	<u></u>			<u> </u>		
Date				ĺ		T	T	T	1		
Source data		ļ	 -	ļ	<u> </u>		 -		ļ		
Conductivity	 	<u> </u>	ļ	 		 	 				——
Total Soluble	 		 	 	 	 	 		 	- 	
salts				1	l			1	1		1
Total Hardness										1	
Calcium						<u> </u>				1	
Magnesium										1	
Sodium computed	·									1	_
Carbonates											
Bicarbonates				ļ	ļ	<u> </u>					
Chlorides	 				ļ		<u> </u>				
Sulfates	 		ļ		 	 	<u> </u>				
Nitrates Fluorides	 		 			 	├ ——	 	 	4	
Boron	 				ļ	 	 	<u> </u>	 -	+	
	ļ		ļ				<u> </u>	<u> </u>	<u> </u>	_1	



DRILLER'S LOG

Bagdad Copper Corporation

NEW NEW NEW Section 24, T. 15 N., R. 9 W.

0 -	20feet	decomposed granite - soft
20 -	37	decomposed granite - soft - water
37 -	62	(increased water) soft caving
62 -	65	granite - hard
65 -	80	decomposed granite - soft
80 -	110	granite - hard with narrow soft seams
110 -	117	decomposed granite - soft and sandy (increased water)
117 -	146	granite - hard with soft seams
146 -	148	decomposed granite - soft and sandy
148 -	170	granite - hard
170 -	175	decomposed granite - soft
175 -	180	granite - hard
180 -	212	decomposed granite - soft and sandy
212 -	228	granite - hard

Hole drilled in granite fault zone

MANERA & ASSOCIATES, INC.

GROUND WATER INVESTIGATIONS

LECTRICAL RESISTIVITY SURVEYS

	WELL SCHEDULE	,					WE	L. No	o. <u>(B-1</u>	5-9)24	aaa		
		So	urce						Tuno	stona	Well 2	·	
	Recorded by BB	of	data_	SLD	Da	ite	7-20	19	<u>71</u>	,		-	
	State Arizona									Bagdag	1 15'		
	T. 15 N % R												
	Owner Bagdad Co	2 2000			 	<u> </u>				. / -2 - 111	·1/	B&M	
	Dayuau Cu	pper C	orp.		A0	aress	ragor	id, Ari	zona				
	Driller Bagdad Co	pper C	orp.			dress	Bagda	id, Ari	zona				
	Surface Altitude		Me Dr	thod illed	Cable	Rot	ary	Rever	se Ro	tary	Air R	otary	
	Total Depth 250	f	t. Mea	asured	l, Rep	orted,	, Date	drille	ed	Dec.	19	9 59	
	Date well deepened											<u> </u>	
	Casing Diameter_										_in	to	_ft.
	Perforations 100	to	250	[t	to_		ft	to	ft.				
		ze ope											
	Major Aguifer	•			3/	······································		_	<u> </u>	0		-	
	Major Aquifer					mor	rduite	<u> </u>					
	Projects												•
	Date	when drid.	12/65					1		1	T	7	7
	Source data	SLD		SLD	 	 	 	 		 	 	 	ł
LA	SWL	10						i —	 	 	+	 	ł
A _J	Altitude WL Discharge								 	 	 	 	1
Q	Discharge					,		1	1	1	 	 	┨
ñ	Bbu	 		195							•	1	l
Ž	gpm Drawdown feet	·		134	•	1						1	1
4F	Specific Compaits	 		134	 	 		-	 	ļ	ļ]
5	Specific Capacity Perforated	 									·	<u> </u>	
D,	Interval	1		Ì	! !		<u> </u>		1	1			1
	Formation	 				 	 	<u> </u>			<u> </u>	L	1
	Coefficient				·		Ì		1			į	
							1		1	<u> </u>	<u> </u>	<u> </u>	1
	<u>Date</u>												1
	Source data										1	 	1
S	Conductivity									 -	 	 	1
SE	Total Soluble salts												Ì
בא	Total Hardness	 						<u> </u>					
Ø	Calcium	 					ļ			<u> </u>			}
Z	Calcium Magnesium	 						ļ]
, T	Sodium computed							!	<u> </u>	ļ	<u> </u>		
Æ	Carbonates							<u> </u>	ļ		<u> </u>		1
$\tilde{\Omega}$	Bicarbonates							 	 	ļ	<u> </u>		1
X	Chlorides	 						<u> </u>	 		 	 	
	Sulfates							 		 	 		
5	Nitrates							 			 		
_	Fluorides					-							
	Boron												



Chromium

DRILLER'S LOG

Bagdad Copper Corporation

NE날 NE날 NE날 Section 24, T. 15 N., R. 9 W.

0 - 250feet

decomposed granite



WELL SCHEDULE				WEL	0: در	. <u>(B-1</u>	<u>5-9)24</u>	aaa		
	C						stona			
Recorded by BB	Source of data	C1 D	Data	7 00	10		3 (0)10	well 3	•	
State Arizona	County	Yavapa	i	Topogra	phic	Мар	Bagda	d 15'	_	
T. 15 N S R	. 9 1% i	V Sect	tion 24	NF	1/4	RF 1	/4 NF	1/	<u> </u>	
^					-				B&M	_
Owner Bagdad Cop	<u>per Corp.</u>	····	Addres	s <u>Bagda</u>	d, Ar	izona				
Driller Bagdad Cop	per Corp.		Address	<u>Bagda</u>	id, Ar	izona				
Surface Altitude 3870	M D	ethod	churn	stary D		an Pot	.	A:- D		
Total Depth 522										
Date well deepened	i	19_	Tot	al Depth				ft.		
Casing Diameter_	12 inches	0 to	504 ft_	inch	e s	_to	ft	_in	_to	_ft.
Perforations 0	to 504	ſt	_to	_ft	to	ft.				
Si	ze opening_	1 x 4		luts ne	r for	 6				
									-	
Major Aquifer			Minor	Aquiter						
Projects										
Date	when drid. 8/14/	/62						T		1
Source data	SLD SLD							 	 	1
SWL Altitude WL	492 30									1
Discharge]
anm	540		ļ	1 1						
Drawdown										1
1661	55							}		1
Specific Capacity Perforated										1
Perforated								 	1	1
Interval		 								l
Formation Coefficient					,					1
Coefficient	<u> </u>	<u> </u>						L	<u> </u>]
Date				T				T	T	1
Source data							ļ	 		
Conductivity				 				 	 	1
Total Soluble salts									 	
Total Hardness		1			· · · · · · · · · · · · · · · · · · ·				<u> </u>	l
Calcium		+		+:					ļ <u>.</u>	
Magnesium	 	 						 	ļ	l
Sodium computed		 		+	· · · · · · · · · · · · · · · · · · ·				 	ļ
Carbonates								 	 	
Bicarbonates				1	· · · · · · · · · · · · · · · · · · ·			 	 	1
Chlorides								 		
Sulfates										
Nitrates	 			 T						
Fluorides	 	 -		1						
Boron	 	 -								



DRILLER'S LOG

Bagdad Copper Corporation

NE% NE% NE% Section 24, T. 15 N., R. 9 W.

0 - 45feet	soft decomposed granite
45 - 88	soft decomposed granite, boulders, cavey
88 - 134	soft decomposed granite
134 - 138	soft decomposed granite - sand
138 - 170	soft decomposed granite
170 - 175	clay and sand
175 - 185	sand - cavey
185 - 190	boulders and sand
190 - 194	hard granite
194 - 202	sand
202 - 210	hard granite
210 - 215	sand
215 - 221	sand and boulders
221 - 232	hard granite
232 - 237	soft decomposed granite
237 - 270	hard granite
270 - 290	soft decomposed granite
290 - 332	hard granite
332 - 360	hard and soft seams
360 - 397	soft decomposed granite
397 - 415	hard granite
415 - 522	soft decomposed granite

INSTRUCTIONS

- No single application for the auction of water from State lands shall include well sites located in more than one section of land.
- This application will not be considered unless it is fully completed and all supplemental forms and information, including the hydrology report referred to in question 15, are completed and attached.
- 3. Attach additional pages, if necessary.
- 4. Filing fee of \$50.00 must be paid at the time this application is submitted.

ARIZONA STATE LAND DEPARTMENT

1624 West Adams

Phoenix, Arizona 85007

APPLICATION FOR THE COMMISSIONER TO AUCTION WATER FROM STATE LANDS

APPLICANT INFORMATION

	APPLICANT 1	NFORMATIC	<u> </u>		
I/we Cyprus Mines	Corporation .				
	, (n	ame)			<u> </u>
of Post Office B			na 8632	1	
4 - 1		dress)			
do hereby make applica described, in accordan the rules and regulati surface lease, easemen	ce with the pro- ons of the State	visions of e Land Depa	the law o	f the State he provisio	of Arizona,
Subdivision	Section	Township	Range	Acreage	County
SW4SW4NW4	17	13N	9W	10	Yavapai
1. State whether indi	vidual, partner	ship or cor	poration.	corpora	tion
2. If individual, sta	te: Age <u>n/a</u>	Sex	_ Marita	l Status	
3. If corporation, gi	ve State in which	ch incorpor	ated. De	elaware	
Is the corporation					
4. If a partnership, n/a					
5. Would the rights up the applicant? Not agreement shoof each beneficiar.	If yes, powing the name.	olease attad address. a	ch a cert:	ified recor	ded conv of the
I hereby certify un contained and state and belief, true, o	ements herein	made are	. to the	hat the i	information my knowledge
Dated this 15th	day of _	March	, A.	D., 1986	
		•		Mines Cor	poration
		4	Applicant	_	
		Ĭ	3y (61	Feno	
		-	C.W. Rer		i <u>General Ma</u> nager
THE FOLLOW	ING IS NOT TO B	E FILLED IN			
Fees Received:	Receipt No	٠.	Reco	rded by:	
Date of Contract Cause of Denial	Approv	ed or denie	ed by	ate:	
			I.	/a : c ·	

June	his applicate of groundwa 7	ter p	er ye	ar for	the ending	ten June 6	year period	gallonsx beginnin B <u>96</u> which	ያተ×ጜ g ch i
dome	essful bidde estic, mun industria	icipa	Turk	on, un	urpose	icant prop	oses to use	Tor	
(a)	The water w	will b	e rem d on	oved b	v the i	ise of the	presently o	existing	well
	Location		Sec.	Twp.	Rge.	Depth	Pump H.P.	Capacit	y
	SWL SWL	NW ₁	17	13N	9W	473'	none	400	g.p
	l_1l_1	¹ 4							g.p
		<u>_</u>							
(b)	expansion (agemen (herea	scrib t Are	ed in a or a	subsect n area	tion (a) 1 designate	ocated on la	ands with	in a
	No				-	T. T			
	If so, indi	icate	which	AMA o	r INA:	n/a			
	If applicat	ble, i water	s the sough	re a g t to b	randfa e purci	thered wat nased by r	er right as eason of th	sociated is applic	with atio
	If applicat the groundy no	ble, i water	s the sough	t to b	e purci	nased by r	er right as eason of th unt of gran	is applic	atio
	If applicat the groundy no	ble, i water t is t	s the sough	t to b	e purci	nased by r	eason of th	is applic	atio
(a)	If applicate the groundy no If so, whate rights?	t is t	s the sough	t to b	antic	nased by r	eason of th	is applic	atio wat
(a)	If applicat the groundy no If so, what rights? If applicat	t is t n/a ble, t new we	s the sough he ty he sa	pe and	e purch antic the wa	nased by r ipated amo	eason of th	is applic dfathered following	atio wat
(a)	If applicate the groundy no If so, what rights? If applicate described r	t is t n/a ble, t new we	s the sough he ty he sa	pe and	e purch antic the wa	nased by r ipated amo	eason of th unt of grand equire the	is applic dfathered following Capacit	atio wat
(a)	If applicate the groundy no If so, what rights? If applicate described received re	t is t n/a ble, t new we	s the sough he ty he sa	pe and le of Twp.	antic the wa	nased by r ipated amo ter will r Depth	eason of th unt of grand equire the Pump H.P.	is applic dfathered following Capacit	wat wat
(a)	If applicated prounds no If so, what rights? If applicated process described received no If applicated process in the If applicated	t is t n/a ble, t new we	s the sough he ty he sa	rpe and le of Twp.	antic the wa	nased by r	eason of th unt of grand equire the Pump H.P.	is applic dfathered following Capacit	wat y g.p
	If applicate the groundy no If so, what rights? If applicate described received rec	t is t n/a ble, t nole, t new we	s the sough he ty he sa lls:	pe and le of Twp.	antic the wa	nased by r	eason of th unt of grand equire the Pump H.P.	is applic dfathered following Capacit	y g.p g.p
	If applicate the groundy no lead to the groundy no lead to the lea	t is t n/a ble, t new we	he ty he sa lls: Sec.	pe and le of Twp.	antic the wa	nased by r	eason of th unt of grand equire the Pump H.P.	is applic dfathered following Capacit	y g.p g.p
	If applicate the groundy no If so, what rights? If applicate described received rec	t is t n/a ble, t new we	s the sough he ty he salls: Sec.	rpe and le of Twp. bed in	antic the wa	nased by r ipated amo ter will r Depth	eason of th unt of grand equire the Pump H.P.	is applic dfathered following Capacit	y g.p g.p

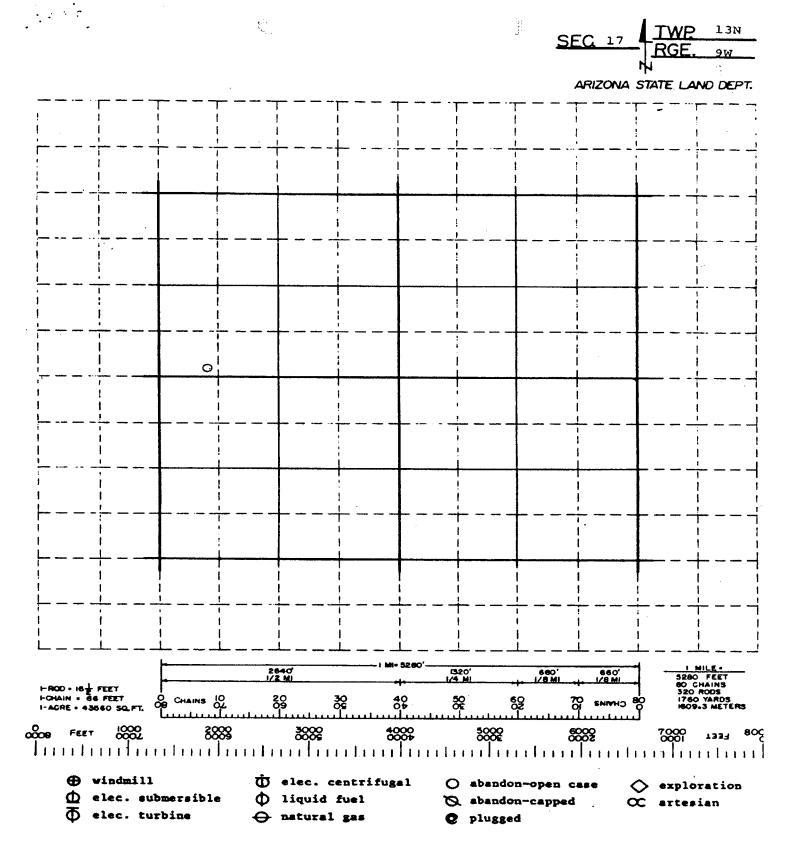
9.	The State lands from which the water is proposed to be withdrawn, and across which the water is to be transported, is subject to Lease Number 03-1393, issued to Cyprus Bagdad Copper Company
10.	There are no known mineral claims, abandoned workings, minerals, oil, gas. fertilizer or fossils upon the land deferred to in questions 7, 8, 9 and
	13 except: None

	ater v	well c	asing (r	ot in	use)			
						-		
								
								
and	are ov	vned by	Cyprus	Mine	s Corpor	ation		
The	follow	ving des	cribed ne	ew impr	ovements w	vill be req	uired in a	ddition
the	wells:	:						
3	n/a							
(a)	Tha .		11 ha		Ab - C-11-			
(α)		acer wi	ii be use	ea upon		wing descr	ided lands	:
	Sub. S ¹ 3				Section 2	Twp.	Rge. 9W	Coun Yava
	S.	*xx	×**	***	3	14N	9W	Yava
	ΝŻ	x.x	xx	X X	10	14N	9₩	Yava
					11	14N	0.7.7	
	NW	^l ä	xxx	X		T-214	9W	Yava
(b)	In tr use d trans	ansport lescribe	ing the w d in subs	vater fi	om the pl	ace of wit is questio boundaries	hdrawal to	the nla
(b)	In tr use d trans	ansport lescribe ported	ing the w d in subs	vater fi	om the pl	ace of wit	hdrawal to	the nla
(b)	In tr use d trans	ansport lescribe ported	ing the w d in subs	vater fi	om the pl	ace of wit	hdrawal to	the nla
(b)	In tr use d trans	ansport lescribe ported	ing the w d in subs	vater fi	om the pl	ace of wit	hdrawal to	the nla
	In truse d trans	ansport lescribe ported s, expl	ing the wid in subsacross ba	vater fi	om the pl (a) of th subbasin	ace of withis question boundaries	hdrawal to n, will the ? yes	the pla e water
(b)	In truse d trans If you	ansport lescribe ported s, expl	ing the wid in substacross batain:	vater fisection or	com the place of the subbasin	ace of wit	hdrawal to n, will the ? yes	the pla e water
	In truse ditrans If you	ansport lescribe ported s, expl	ing the wid in subsacross baain: s describ	vater filection is in or	com the pl (a) of the subbasin subsection indicate w	ace of withis question boundaries (a) locate hich AMA oned water r	hdrawal to n, will the ? yes ed within or INA:	the pla e water an AMA o
	In truse ditrans If you	ansport lescribe ported s, expl	ing the wid in subsacross baain: s describ	vater filection is in or	com the pl (a) of the subbasin subsection indicate w	ace of withis question boundaries	hdrawal to n, will the ? yes ed within or INA:	the pla e water an AMA o
	In truse d trans If you have a trans Are t INA? If apthe 1 If ye	he land	ing the wid in substacross batain: s describe. It is the n which the is the a	vater fisection or sin or ed in sin or ed in sin or ed in sin or en a grand the water en a gr	com the pl (a) of the subbasin subsection indicate we	ace of withis question boundaries (a) locate hich AMA oned water r	hdrawal to n, will the ? yes ed within r INA: ight assocused? n	the pla e water an AMA o iated wi
	In truse detrans If your area to INA? If apthe 1 If ye water	he land no plicabland upo s, what right?	ing the wid in substacross batain: s describe. If the number of the is the and	water filection is in or ed in set of so, ere a grand material and the water inticipal and the water i	com the pl (a) of th subbasin subsection indicate w randfather er is prop	(a) locat which AMA o ed water rosed to be and amount	ed within a r INA: ight assocused? of the grader	the pla e water an AMA o iated wi
	In truse detrans If year Are tana? If apthe large water Are tarea	he land upo s, what right? he land of, or	s describen which to is the and a secretal beautiful to the secretal by the served by	water fisection is in or	com the pl (a) of the subbasin subsection indicate we candfather er is prop	(a) located water rosed to be and amount	ed within r INA: ight assocused? of the graded within	an AMA o
	In truse detrans If year Are tana? If apthe large water Are tarea	he land upo s, what right? he land of, or	ing the wid in substacross batain: s describe. It is the and a s describe.	water fisection is in or	com the pl (a) of the subbasin subsection indicate we candfather er is prop	(a) locat which AMA o ed water rosed to be and amount	ed within r INA: ight assocused? of the graded within	an AMA o
	In truse detrans If year Are tana? If apthe large water Are tarea	he land upo s, what right? he land of, or	s describen which to is the and a secretal beautiful to the secretal by the served by	water fisection is in or	com the pl (a) of the subbasin subsection indicate we candfather er is prop	(a) located water rosed to be and amount	ed within r INA: ight assocused? of the graded within	an AMA o
	In truse detrans If your Are tanns If apthe 1 If ye water Are tarea no	he land no s, what right? he land of, or . If	ing the wid in substacross bath ain: s describent which the is the ain	med in section or ded in section or ded in section or ded in section or ded in section of the water ded in section of the water ded in section of the sectio	com the pl (a) of the subbasin subsection indicate we candfather er is properties proper	(a) located water rosed to be and amount (a) located private water rosed to be and amount (a) located private water wate	ed within a r INA: ight assocused? of the graded within ter company	the place water an AMA of andfathe the servey or utiling to be
	In truse detrans If your area tarea no Do thavail	he land upo s, what right? he land of, or elands able by explain	ing the wid in substacross batain: s describe e, is the analytical in the analytica	water filection or sin or sed in sin or he water filed in Sin or sed in	subsection indicate we and ather is properties type subsection indicate we and ather is properties type subsection central Ar	(a) located to be and amount (a) located to be and amount (a) located to be and amount (b) located to be and amount (c) located to b	ed within r INA: ight associused? of the graded within ter company y for water ect?	an AMA o
	In truse de trans If year Are tarea no Do thavail yes. delive	he land no plicabl and upo s, what right? he lands of, or e lands able by explain ered and ered ered ered ered ered ered ered er	ing the wid in substacross bath ain: s describent which the is the and served by yes, expure describent eason of the typed the amount of the typed the amount is the amount of the typed the amount is the typed typed the typed ty	water filection is in or water filection or water filed in Since a grant icipated in Since and i	subsection and type subsection central Aruthor the prese	(a) located to be and amount (a) located to be and amount (a) located to be and amount (b) located to be and amount (c) located to b	ed within r INA: ight associused? of the graded within ter company y for water ion of Center of Center water	the place water an AMA of the serve or utiling the serve will be trail Arises.
	In truse de trans If year Are tarea no Do thavail yes. delive	he land no plicabl and upo s, what right? he lands of, or e lands able by explain ered and ered ered ered ered ered ered ered er	ing the wid in substacross bath ain: s describent which the is the and served by yes, expure describent eason of the typed the amount of the typed the amount is the amount of the typed the amount is the typed typed the typed ty	water filection is in or water filection or water filed in Since a grant icipated in Since and i	subsection and type subsection central Aruthor the prese	(a) located to be and amount (a) located to be and amount (a) located to be and amount (b) located to be and amount (c) located to b	ed within r INA: ight associused? of the graded within ter company y for water ion of Center of Center water	an AMA o

14.	use of the	oplicant awak any impediment to the withdraw transportation, or of the groundwater as described in this application existing by reason he Act or any other law which may affect the legality of the sale ied for herein?
	If y	es, explain:
		•
15.	Attac	th a hydrology report which shows that the amount of water sought to be based is available.
16.	Using of th	the plat on the following page, identify the locations of whichever ne following are applicable:
	(a)	Presently existing wells;
	(b)	Proposed new wells;
	(c)	Presently existing improvements other than wells;
	(d)	Proposed new improvements other than wells:
	(e)	Access routes, including description and dimensions;
	(f)	Basin or subbasin boundaries;
	(g)	Land upon which water is proposed to be used; and
	(h)	Land ownership,
Reguired Water State State the / agree with appro	e will lation r Agre ace le e Lanc Arizor ement drawal oval c	pplication is approved and an auction is held, any resulting access be subject to the laws of the State of Arizona, the Rules and is of the Department, the provisions and conditions contained in the ement, and the provisions and conditions contained in the appropriate case, easement or permit which buyer must acquire from the Arizona Department. Neither the making of this application, acceptance by a State Land Department of this application or filing fee, a water nor subsequent issuance if any surface lease, easement or permit for or transportation of the water purchases should be considered as an er suggestion of any kind whatsoever of an access route over any primal, Indian or other lands.
		ACKNOWLEDGMENT
one n Depar	naking "tment s to c	nature below, the applicant acknowledges and recognizes that neither of this application nor the acceptance by the Arizona State Land of this application or the filing fee submitted herewith in any way rests in the applicant any right or entitlement to any water or use and for which this application is made.
		VERIFICATION
ion, corre	erjury , and ect an ify th	this application, I/We hereby certify to the Department under penalty that the statements made and information contained in this application all supplemental information attached hereto, are full, true, d complete to the best of my/our knowledge and (if applicable) further at I/We am/are legally authorized to make this application for and on the persons described herein.
DATE	<u> </u>	C.W. Reno Signature(s)

If applicant is other than individual, indicate:

VP and General Manager
(Title of person signing)



7-82

E.

FOR DEPARTMENTAL USE ONLY

Received \$	Date	Ву	Receipt No.
All following refer to Apages hereof.	pplication No		on the previous
APPRAISAL & DETERMINATIO	N:		
The Commissioner does her PER ACRE FOOT (other uni- production to be	reby appraise thunits.	ne value of the n	water at \$ nes the minimum annual
Dated this day			
	· .	STATE LAND DEPAR	MENT
****	3	STATE LAND COMMIS	STONER
ORDER AUTHORIZING SALE:			
above, with special cond	w in such cases itions as follow	made, utilizing	eject water according to the values set forth
Dated this day	of	1-11-11-11-11-11-11-11-11-11-11-11-11-1	19
	s	STATE LAND DEPART	MENT
		STATE LAND COMMIS	SIONER
ORDER REJECTING APPLICATI	ION AND DISSOLVI	NG SALE:	
The Commissioner and the that it is not in the best described in the applicat	it interest of t	THE STATE OF APIS	in the premises find ona to sell the water
THEREFORE IT IS ORDERED t	hat the applica sale thereof is	tion is hereby o hereby dissolve	enied and, where appli-
Dated this day			
	· · · S	TATE LAND DEPART	MENT

STATE LAND COMMISSIONER

Hydrologic Investigation of the Skunk Creek Well Area

for

Cyprus Bagdad Copper Company

Ьу

Paul A. Manera, P.E.



INTRODUCTION |

Location

Skunk Creek Well is located in the SW_4 SW_4 NW_4 Section 17, T. 13 N., R. 9 W., as shown in Figure 1. The well is one fourth mile north of Arizona Highway 97, Yavapai County, Arizona.

Historical Background

A geologic reconnaissance in late 1972 of the area around a windmill in Section 9, T. 13 N., R. 9 W., proved the existence of an alluvial basin approximately five miles long and two miles wide. The thickness of the alluvial fill was checked with an electrical resistivity survey. On the basis of this information Skunk Creek Well was drilled and tested in 1973. The well was capped and has not been in use since that time.

GEOLOGY

General

The alluvial basin is bounded on the south by granite and on the north by schist as shown on the geologic map of Yavapai County, Figure 2. Field mapping showed the presence of lakebed clays which had been highly eroded and the basin later aggraded with coarse detrital materials, shown on Figure 3.

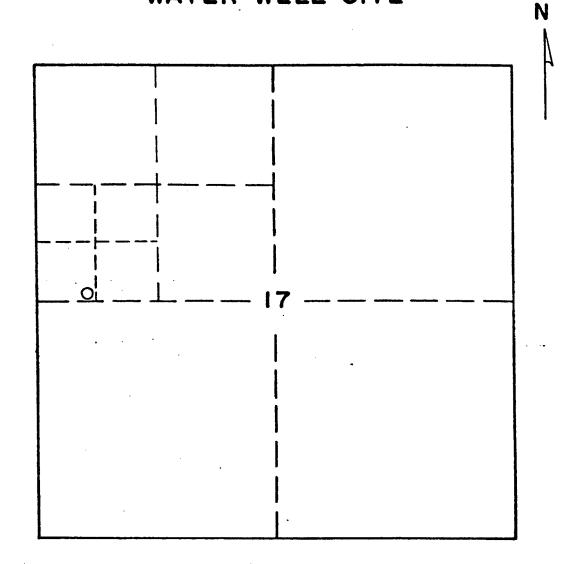
The geophysical data (electrical resistivity) indicated that the thickness of the alluvial fill increased from 250 feet at the

MANERA & ASSOCIATES, INC.

GROUND WATER INVESTIGATIONS

FIFCTDICAL DESIGNATION STRAIGHT

CYPRESS BAGDAD COPPER COMPANY WATER WELL SITE



SKUNK CANYON (FUTURE SOURCE)
T. 13 N., R. 9 W., SEC. 17, SW SW NW
LEASE NO. 1393, 10 ACRES (COMMERCIAL)

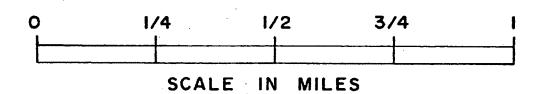
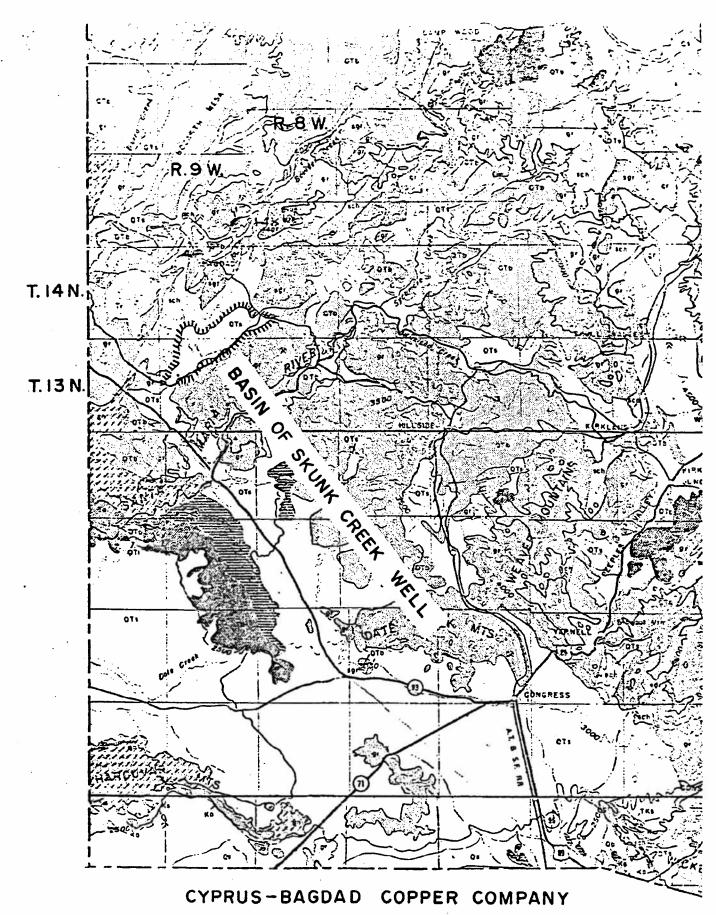


FIGURE I



GEOLOGIC MAP SHOWING BOUNDARY OF BASIN OF SKUNK CREEK WELL

SCALE: I INCH = 6 MILES

FIGURE 2

MANERA & ASSOCIATES, INC.

upper (northeastern) end to 550 feet at the lower (southwestern) end of the basin. The Skunk Creek Well was drilled to a total depth of 473 feet. At that depth the material was still a form of conglomerate, thus proving the general thickness range of the alluvial fill, as defined by the geophysics. The log of the drill cuttings and the well schedule are included as an appendix with this report.

HYDROLOGY

Static Water Level

The static water level on January 17, 1973 was 58 feet. The saturated thickness of the aquifer at the Skunk Creek Well was 473 - 58 = 415 feet.

<u>Pumping Tests</u>

Three pumping tests were run on the Skunk Creek Well:

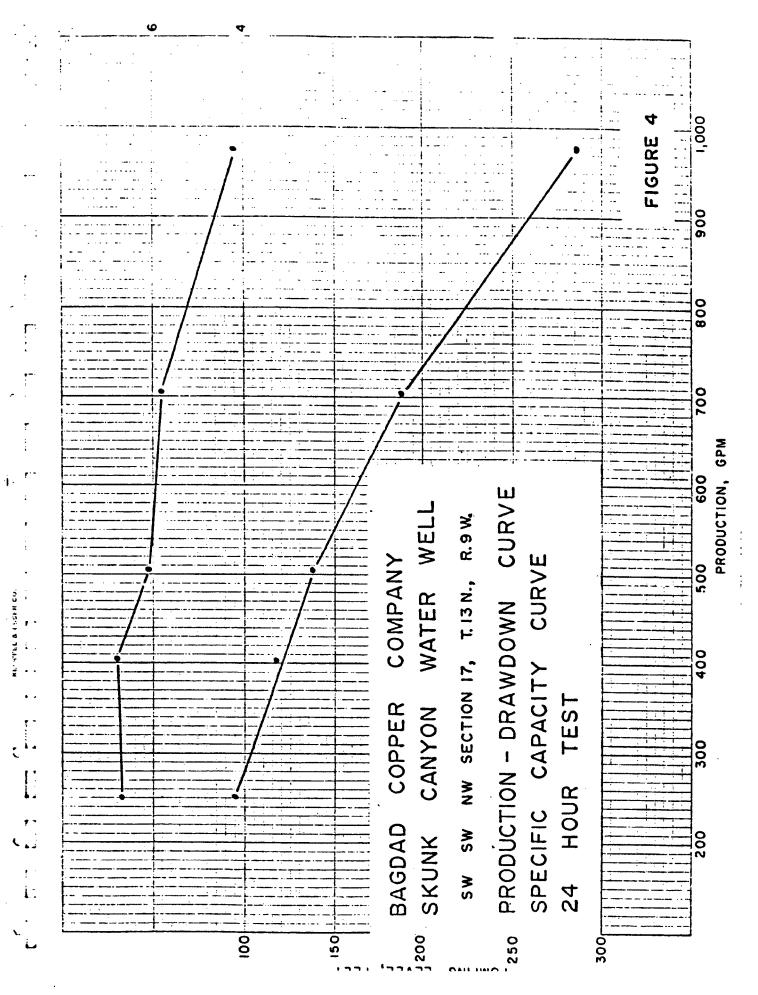
- 1. a 24 hour step test;
- 2. a ten day constant discharge test at 448 gpm; and
- 3. a ten day constant rate discharge test at 602 gpm.

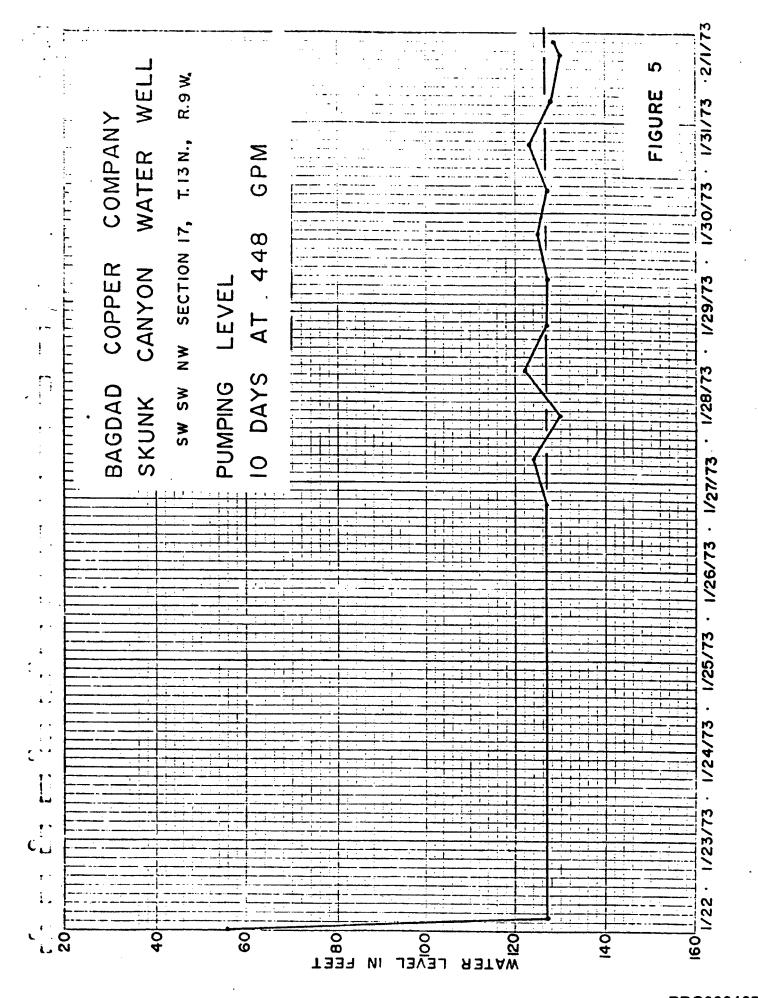
The break at 500 opm indicated by the step test data shown on Figure 4 indicates that the maximum long term yield of the well is below 500 gpm. To confirm this opinion the two ten day pumping tests were run, one at a discharge rate below 500 gpm and one above that rate of production. Figure 5 shows the stable pumping level at a production rate of 448 gpm and Figure 6 shows the continuously declining pumping level at a production rate of 602 gpm. The pumping test data sheets are included in the appendix.

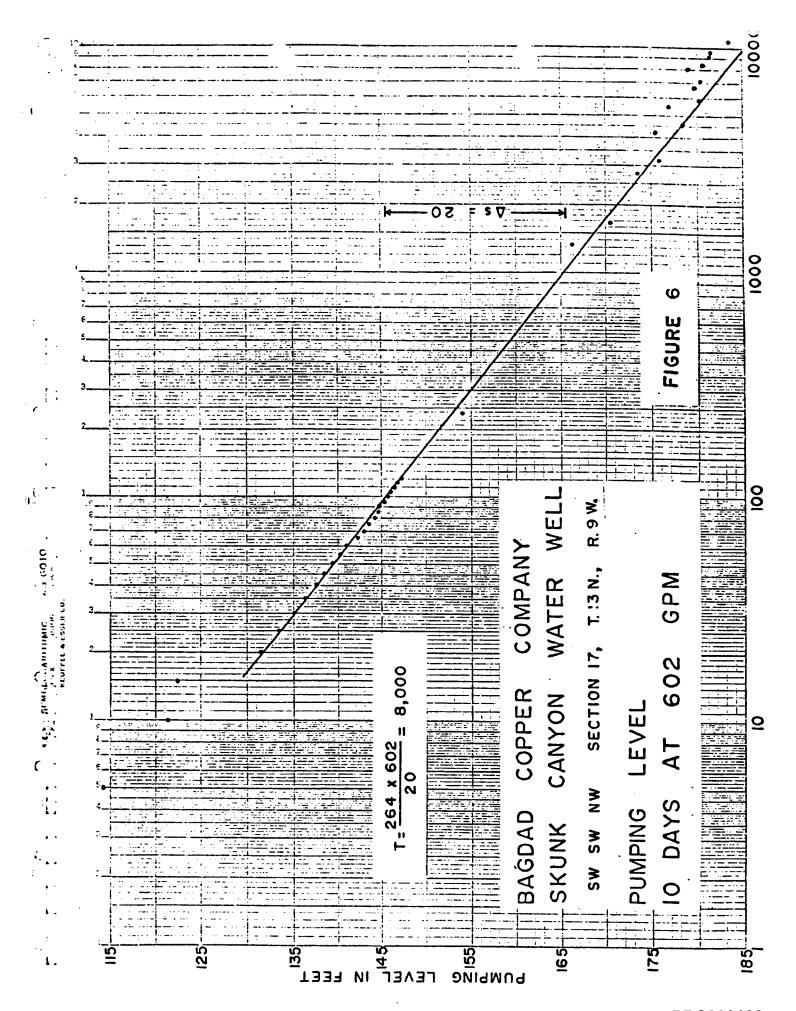
MANERA & ASSOCIATES, INC.

GROUND WATER INVESTIGATIONS

LECTRICAL RESISTIVITY SURVEYS







The recovery curves, Figures 7, 8 and 9 show that the tranmissivity range of the aquifer(s) is 5,000 to 8,000 gallons per foot per day.

The aquifer transmissivity and the pumping test data indicate that a production rate of 400 gpm on a 16 hours on - 8 hours off duty cycle would be the most desirable for maximum longevity of the ground water supply.

Longevity of the Ground Water Supply

Using a tank analogy with a five mile by two mile basin and an assumed average thickness of saturated aquifer of 250 feet (less at the upper end and more at the lower end) would give a volume of saturated aquifer of

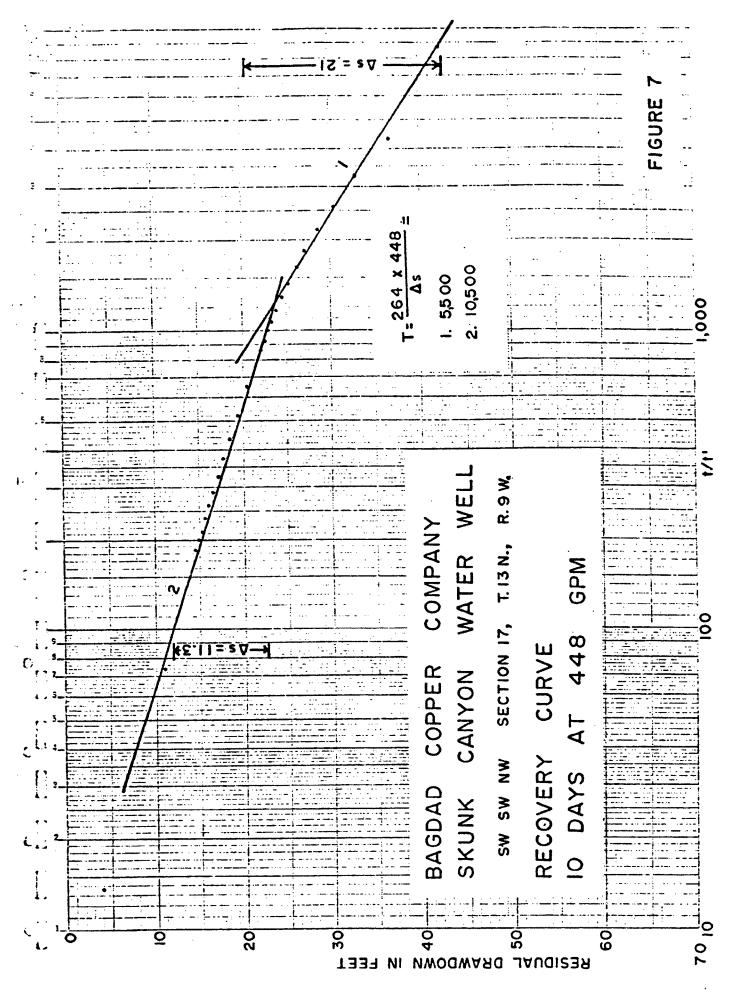
 $2 \times 5 = 10$ square miles or $640 \times 10 = 6,400$ surface acres $6,400 \times 250 = 1,600,000$ acre-feet of reservoir volume.

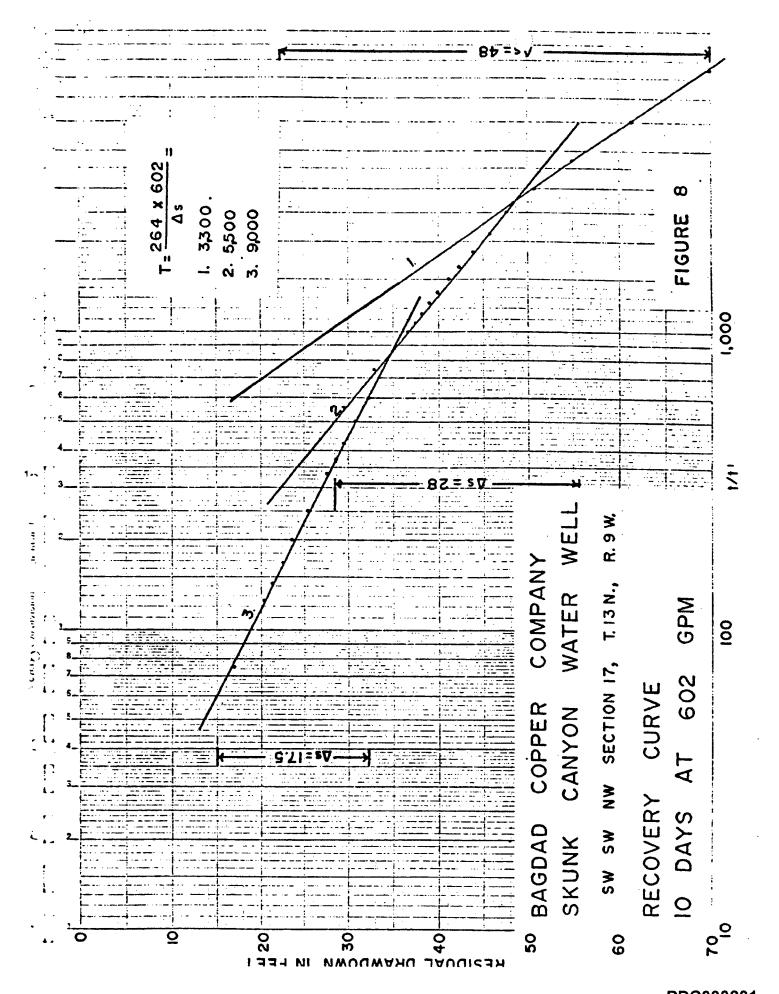
Assuming a porosity of 10 percent the volume of water in storage is: $1,600,000 \times 0.10 = 160,000$ acre-feet.

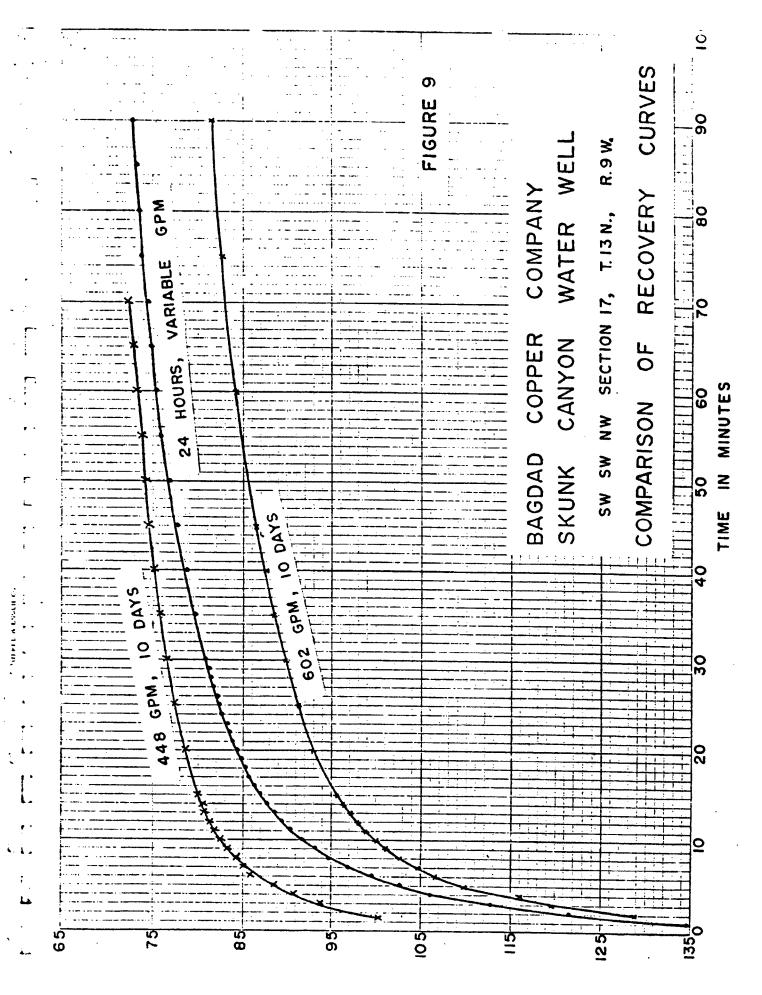
Using a practical recovery rate of 100,000 acre-feet of the 160,000 acre-feet in storage and a withdrawal rate of 1.18 acre-feet per day (400 gpm \times 960 minutes) the longevity of the water supply would be 100,000 \div 1.18 = 4,746 days \div 365 = 13 years.

The 60,000 acre-feet left in storage and the recharge would act as a safety factor.









CONCLUSION

A longevity of the water supply in the basin of the Skunk Creek Well will exceed 13 years at a withdrawal rate of 1.18 acrefeet per day (400 gpm for 960 minutes per day).

As the water in storage in the aquifer is withdrawn the pumping portion of the daily duty cycle may be increased to maintain the daily withdrawal of the 1.18 acre-feet per day.



MANERA & ASSOCIATES, INC.

GROUND WATER INVESTIGATIONS

LECTRICAL RESISTIVITY SUBVEYS

APPENDIX A

WELL SCHEDULE AND LOG

	Recorded by	Source of data		Dat	e	19									
	State Arizona														
	T. 13 N S R.								W. 1. 1.						
	Owner Bagdad Copt	er Corpor	ation	Add	ress Box	245, Bacda	d, AZ	86321	B&M						
	Driller Moss - Webe	er. Inc.		Add:	ress P. O	. Box 2130	5, Phoe	nix, AZ	85036						
	Surface Method Altitude Drilled Cable Rotary Reverse Rotary Air Rotary														
	Total Depth 473	ft. M	leasure	d, Repo	rted, Date	drilled_	Decembe	r 14 19	72						
	Date well deepened														
	Casing Diameter	16 inches	s <u>0</u> t	o <u>432</u>	ftinc	hesto	ft_	in	to	ft.					
	Perforations 0	to 432	ft	to	ft	_to	ft.			-					
		e opening													
	Major Aquifer								•						
	Projects				-										
	Date					T T		T		i					
; ,	Source data														
TA	SWL									1					
K	Altitude WL Discharge				·										
D	Discharge gpm														
ONIC	gpm Drawdown feet Specific Capacity Perforated						_								
Ξ	Specific Capacity			1											
PU	Perforated				-										
-	Interval Formation														
	Coefficient			1 1	:										
									L						
	Date			<u> </u>											
	Source data														
Š	Conductivity														
YSE	Total Soluble														
7	Total Mandage					 									
A	Total Hardness Calcium Magnesium					 									
Z	Magnesium			 											
	Magnesium Coding Coding					<u> </u>									
_	Sodium computed		_	 											
$\mathbf{\tilde{o}}$	Carbonates														
CHEMICA	Bicarbonates			 -											
<u>2</u>	Chlorides			 		L									
Ш	Sulfates			1											
ົບ	Nitrates			1											
	Fluorides			1											
	Boron														
	Chromium	1													



DRILLER'S LOG

Cyprus-Bagdad Copper Company

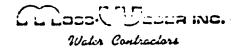
Skunk Creek Well

SW2 SW2 NW4 Section 17, T. 13 N., R. 9 W.

0 - 230 feet	Conglomerate, brown; 20% to 50% clays, 10% to 20% sands, 30% to 70% gravels; gravel fragment are largely granite and schist and average 1/16" to 1/8", locally some up to ½"; Angularity is subrounded to subangular; calcium carbonate present in fines.
230 - 255	Sandy-clayey conglomerate, brown; 55% clays, 25% sands, 20% gravels which average about ½" and are subangular, largely granite and schist; CaCO ₃ in fines.
255 - 315	Sandy conglomerate, brown; 30% clays, 45% sands, 25% gravels, largely granite, schist, some gabbro; which are subrounded to subangular; calcium carbonate in fines.
315 - 473	Sandy-clayey conglomerate, brown to olive-brown; 40% to 50% clays, 35% to 45% sands, 15% to 20% gravels, which are largely gabbro, with some granite and schist fragments, all are subrounded to subangular; fragments average 1/16".
58	Depth first water encountered. No artesian water, water appears to be supplied from all conglomerate units.

APPENDIX B

PUMPING TEST DATA



FINAL WELL TEST

					JM. 17.	
Customer BAGD!	STERO OF	Co		Job No		
Well No. SKANK (
Address	_0					
	Cable Tool 💢 R					
	Development			FINAL TEST		
	Beginning of	High	Second	Third	Fourth	Low
GPM	280	974	703	503	402	350
Pumping level	93	286	179	137	117	9
Static level	58	58	28	28	28	5
Draw- down	35	228	121	79	59	3
Specific yield	0,2	4.2	5.8	6.1	6.8	_6
Pump RPM	715	1400	1175	950	800	, 71
PPM Send	MUDDY	10	5	<u> </u>		3110
Recovery: 5 minute Total Pumping Time Total Pump Setting Bowl Manufacturer Fuel Consumed Engines C	36_hours 120ft. 124NED0~LC Ogal.	Wat Pun Bow Oil	ter Temperaturn Size	re	Air Line	390
Remarks:		•	•			
		d) an	Den (20 _	norale:

		DAD COPPER								
T	13 <u>N</u>	s R 9	E <u>\</u>	Sect	ion 1	7	NM 7 NM	<u>₹ SE</u> ₹		& M
SWI	, 58	Me	easuring	Point 2'	above g	round	Da	te	B	& M
										inches.
		ing Device						•		
										feet
Dat	ta Collect	ed By Bagd	ad Copper	r Company		_ Perfora	ated Into	erval		
Ti	Other	Discharge Q in gpm	Feet	Down Feet S	Specif- ic Ca- pacity	Form- ation Coeffi- cient	Pumping Started t	Time Since Pumping Stopped t' Minutes		Remarks 448 gpm 10 day test
1/22/7	73			,						
15	:30	448	127	69	6.5	·	0			Start Pump
1/27/		448	127	69	6.5					
		448	124	66	6.8					
1/28/	73	448	130	72	6.23					
•		448	122	64	7.0					
· 1/2 <u>9/</u>	73	448	127	69	6.5		<u> </u>			
		448	127	69	6.5				ļ	
· 1/3 <u>0/</u>	73	448	125	67	6.7	<u> </u>			ļ	
· · _		448	127	69	6.5	•		<u> </u>	<u> </u>	
~1/3 <u>1/</u>	73	448	123	65	6.9					
		448	128	70	6.4				ļ	
2/1/7	3	448	130	72	6.23	 	<u> </u>		 	
15	:42	448	128.5	70.5	6.36	ļ	12972		<u> </u>	
15	:58						12988	0	<u> </u>	
, 15:5	9.\$		100.2			<u> </u>	12989.	 	8695.	
16:0			93.6		 		12991	3	4330.	3
: 16:0)2		90.8	<u> </u>	 		12992	4	3248	
16:0)3	-	88.5	 			12993	5	2598.	
· 16 <u>:</u> 0	04		86.6	\$ 28.68			12994	6	<u></u> 2165.	6

	DANT.	EPK IEDI	• AUE	<u>_</u>		•	ELL_(L-	·13-27 11	occ		
 •	•	Reading Orifice Other	•	r ping L 21 Feet	Residual Draw Down Feet S	Specific Capacity	Form- ation	ime ince Pumping	Time Since Pumping Stopped t'		Remarks
	16:05			85	27			12995		1856.	<u> </u>
	16:06			84.17	26.17			12996		1624.	
	16:07			83.17	25.17			12997	9	1444	
	16:08			82.64	24.64			12998	10	1294	
	16:09			81.84	23.84			12999	11	1181	
٠.	16:10			81.34	23.34			13000	12	1083	
	16:11			80.28	22.88			13001	13	1000	
	16:12			80.50	22.50			13002	14	928	
.	16:13			80.04	22.04			13003	15	866	
	16:18			78.42	20.42			13008	20	650	
:	16:23			77.34	19.34			13013	25	520	
	16:28		٠	76.46	18.46			13018	30	433	9
	16:33			75.79	17.79			13023	35	372	
•	16:38			75.08	17.08			13028	40	325	
	16:43			74.59	16.59			13033	45	289	
	16:48			74.17	16.17			13038	50	260	
	16:53			73.75	15.75			13043	55	237	
·	16:50			73.34	15.34			13048	60	217	4
٠.	17:03			73	15			13053	65	200	
	17:08			72.54	14.54			13058	70	186	
` .	18:56			69	11			13171	183	71	
.2/7	/3										
•	09:00			62	4			14015	1027	13	.64
4 -											
• }											
ة 		<u>, </u>									
` -											
،											
7.											
•											

Well	BAG	DAD COPPE	R COMPANY	, SKUNK C	ANYON W	ATER WELL	·			
T	13 <u>N</u>	S R	<u>9</u> E	<u>W</u> Sec	tion 1	7 1	W & 1	W & SE &		В & М
SWL	59'	M	leasuring	Point			D .	ate		B&M
										inches.
		ing Device								Inches.
							denth			feet
										166£
						101101	ateu Inc	ervar		
Date &	Reading	Discharge Q	Pumping	Residual	Specif-	Form-		Time	t/_,	Remarks
	Other	in gpm	Level Feet	Down	ic Ca- pacity	ation Coeffi- cient	Since Pumping			602 gpm
2/5/72				Feet S	·	cient	t	t'		10 day test
2/5/73								Minutes		
10:00			59.0				0			Start
10:05		602	114	55	10.95		5			
10:10	24 ¹ 2	602	121.33	62.33	9.66		10			
10:15	241/2	602	122.33	63.33	9.51		15			
10:20	241/2	602	131.5	72.5	8.30		20			
10:25	2415	602	133.5	74.5	8.08		25			
10:30	2415	602	135	76	7.92		30			
10:35	2415	602	136.17	77.17	7.80		3 5			
10:40	24½	602	137.5	78.5	7.67		40			
10:45		602	138.17	79.17	7.60		45			
10:50	2415	602	139.17	80.17	7.51		50	•		
. 10:55	2415	602	140.17	81.17	7.42		55			
· 1 <u>1:00</u>	241/2	602	141	82	7.34		60			
· 1 <u>1:05</u>	2412	602	142.17	83.17	7.24		65			
11:10		602	143	84	7.17		70			
- 11:15	24½	602	143.67	84.67	7.11		75			
11:20	2435	602	144.17	. 85.17	7.07		80			
11:25	24½	602	144.33	85.33	7.06		85			
11:30	2435	602	144.85	85.85	7.01		90			
11:35	243	602	145.33	86.33	6.97		95			
								<u></u>		

		1_01	PAGE_				WELL (B-	<u>13-9) 17</u>	bcc		
•	Date & Time	Orifice	Discharge Q in gpm	ping L el Feet	Draw Down	Specific Capacity	ation Coeffi-	me ince Pumping	Time Since Pumping	t/t'	Remarks
					Feet S		cient	t	Stopped t'		
	11:40	245	602	145.67	86.67	6.95		Minutes 100	Minutes		
	11:45	245	602	146	87	6.92		105			
	11:50	2415	602	146.5	87.5	6.88					
	11:55	244	602	146.85	87.85	6.85		110 115			•
	12:00	2415	602	247.25	88.25	6.82		120			
	15:00	241/2	602	154	95	6.34		238			
	6/73	•				0.54		230			
	09:00	241/2	602	266.17	107.17	5.62		1318			
	15:00	241/2	602	170.5	111.5	5.40		1678			
- 2/	7/73						***************************************				•
•	09:00	241/2	602	173.5	114.5	5.26		2758			
	15:00	241/2	602	176	117	5.15		3118			
2/	8/73										
	09:00	241/2	602	175.5	116.5	5.17		4198			
. .	15:00	24½	602	178.5	119.5	5.04		4558			
.2/	9/73										
	09:00	241/2	602	177	118	5.10		5458			
•	15:00	241/2	602	180.17	121.17	4.97		5818			
2/	10/73										
• •	09:00	241/2	602	177.75	120.75	4.99		6718			
• •	15:00	24년	602	180.17	121.17	4.97		7078			
· :2/	11/73					<u> </u>					
	09:00	245	602	179	120	5.01		7978			-
	15:00 .	243	602	180.85	121.85	4.94		8338	·		
[]2/	12/73		·								
	09:00	244	602	181.42	122.42	4.92		9238			
	15:00	244	602	181.5	122.5	4.91		9598			
	13/73										
	09:00	243	602	182.67	123.67	4.87		10498			
	15:00	245	602	183.5	124.5	4.84		10858			

• ;	Date & Time	Orifice	Discharge Q in gpm	T ping L :1 Feet	Residual Draw Down Feet S	Specific Capacity		nce Pumping Started t	Stopped t'		Remarks
. 2	2/14/73							Minutes	Minutes		
	09:00	241/2	602	182	123	4.89		11758			
	15:00	2415	602	185	126	4.78		12118			
2	2/15/73							12110			
. 2	/16/73										
	10:00			183.54	124.54			15058	0		Pump Stopper
	10:01			142	83			15059	1	1505	1
	10:02			128.89	69.89			15060	2	753	
.	10:03			120.25	61.25			15061	3	5020	
e ! !	10:04			114	55			15062	4	3766	
ŗ	10:05			109.75	50.75			15063	5	3013	
•	10:06			106.71	47.71			15064	6	2510	7
(**	10:07			104.75	45.75			15065	7	2152	1
• •	10:03			102.75	43.75			15066	8	1883	3
	10:09			101.25	42.25			15067	9	1674	1
٠.٠	10:10			100.08	41.08			15068	10	1506	8
	10:11			9 8.96	39.96			15069	**	1369	9
• •	10:12			98.04	39.04			15070	12	1255	8
i.	10:13			97.17	38.17			15071	13	1159	3
c^{i}	10:14			96.42	37.42			15072	14	1076	6
1.	10;15			95.67	36.67			15073	15	1004	8
	10:20			92.96	33.96			15078	20	753	9
\mathbf{c}_{Γ}	10:25			91.25	32.25			15083	25	603	3
	10:30			89.71	30.71			15088	30	502	9
Ü	10:35			88.50	29.50			15093	35	431	2
ci.	10:40			87.62	28.62			15098	40	377	45
~ (,)	10:45			86.54	27.54		•	15103	45	335	6
	11:00			84.29	25.29			15118	60	251	9
	11:15			82.67	23.67			15133	75	201	7

GROUND WATER INVESTIGATIONS

ELECTRICAL RESISTIVITY SURVEYS

	. Date	Reading Orifice	Disc	harge	ning	Residual	Specific	Form-	- (<u>3-3) 1</u> ∵me	Time	t/	Remarks
		Other		gpm Q	Le.el Feet	Draw Down Feet	Capacity	ation Coeffi- cient	oince Pumping Started	Since Pumping Stopped		Kemarks
_				····		S			t Minutes	t'		
-	1:30	·			81.42	22.41			15148	90	168.	3
_	1:45				80.50	21.50			15163	105	144.	
1	2:00				79.33	20.33			15178	120	126.	5
_	3:25			······································	76	17			15263	205	74.	5
_	7/73											
1	3:25				64.25	5.25			16703	1645	10.	2
_												
-												
_												
-			· · · · · · · · · · · · · · · · · · ·									
-		-										
_												
_			·····		W. W. J. M. J.							
_			· · ·									
_	7.											
_												
-												
						!						
4												
_												
			•									
_	_		·····						,			
_												